```
Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pebruary 6, 2004, 16:39:35; Search time 34 Seconds (without alignments) 289.440 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         801455 seqs, 209382283 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-004-381-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Published_Applications_AA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MDEKTTGWRGGHVVEGLAGE...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
/cgn2_6/ptodata/1/pubpaa/US09A_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US09B_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US09C_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US09C_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10A_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10C_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                         /cgn2_6/prodata/1/pubpaa/US07_PUBCOMB.pep:*/cgn2_6/prodata/1/pubpaa/bom Non-
                                                                                                                                                                                                                                                                                                                              _6/ptodata/1/pubpaa/PCT_NEW_PUB.pep:*
_6/ptodata/1/pubpaa/USO6_NEW_PUB.pep:*
_6/ptodata/1/pubpaa/USO7_NEW_PUB.pep:*
_6/ptodata/1/pubpaa/USO7_NEW_PUB.pep:*
_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                             6/ptodata/1/pubpaa/US08_NEW_PUB.pep:*6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .....LEHHPQGQREPMMSGGCKLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      801455
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

15 , 7	14 9	13 133	12 15	Ĭ1 19	10 20	9 20	8 20	7 21	6 21	5 22	4 23	3 24	2 24	1 25	Result No. Score
		3 51.6												8 100.0	Query
102	44	89	29	39	479	426	38	101	101	89	75	61	47	47	Length
14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	DB
US-10-004-381-11	US-10-004-381-34	US-10-004-381-28	US-10-004-381-29	US-10-004-381-27	US-10-004-381-38	US-10-004-381-41	US-10-004-381-35	US-10-004-381-19	US-10-004-381-21	US-10-004-381-22	US-10-004-381-23	US-10-004-381-24	US-10-004-381-26	US-10-004-381-25	ID
Sequence 11, Appl	Sequence 34, App.	Sequence 28, App	Sequence 29, App	•	•	-	•	•	•	•	Sequence 23, App	Sequence 24, App	Sequence 26, App	Sequence 25, App	Description

RESULT 2
US-10-004-381-26
; Sequence 26, Application US/10004381
; Publication No. US20020155578A1

1 C C C C 4 4 4 4 4 4 6 7 7 7 7 7 7 7 7 7 7 7 7 7	110 110 110 110 110 110 110 110 110 110	
	ά δό γου ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο	
21.5 21.3 21.3 21.3 21.1 21.1	226.4 225.23.6 227.23.9 227.23.9 227.23.9 227.23.9 227.23.9 227.23.9 227.9 227.9 227.9 227.9 227.9	
1388 1388 243 450 605 5215 5215 5215 5215	101 739 1181 84 342 1139 1140 1140 1147 1197 2222 1065 330 330 330 448 247 448	
112 113 113 114 115	41010 000000 00 000	
-10-173-999-32 -10-173-999-32 -10-186-473-1280 -10-156-761-1361 -10-094-749-2077 -10-156-761-9474 -09-861-289-2 -09-861-846-2 -09-883-384B-2 -09-836-821-2	US-10-004-381-12 US-10-156-761-12448 US-09-864-408A-6610 US-09-912-020-260 US-09-912-020-260 US-09-902-180-6 US-09-864-761-39307 US-10-369-493-3923 US-09-771-161A-239 US-10-146-772-116	
	Sequence 12, Appl Sequence 13097, A Sequence 12448, A Sequence 6610, Ap Sequence 265, Ap Sequence 2955, Ap Sequence 6, Appl1 Sequence 6, Appl1 Sequence 39307, A Sequence 39307, A Sequence 3931, Ap Sequence 116, App Sequence 13710, A Sequence 50, Appl Sequence 50, Appl Sequence 29, Appl	•

## ALIGNMENTS

```
; LENGTH: 47
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE;
; OTHER INFORMATION: selected peptide
US-10-004-381-25
망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 1
US-10-004-381-25
                                       Ś
                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 25, Application US/100 Publication No. US20020155578A1 GENERAL INFORMATION:
                                                                                   Query Match
Best Local Similarity
Matches 47; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: SZOSTAK, JACK W.
APPLICANT: WILSON, DAVID S.
APPLICANT: KEEFE, ANTHONY D.
TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES AND USES
TITLE OF INVENTION: THEREOF
FILE REFERENCE: 00786/388002
                    1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG 47
MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Application US/10004381
                                                                                   100.0%; Score 258; DB 14; ilarity 100.0%; Pred. No. 3.7e-26; Conservative 0; Mismatches 0;
                                                                                                                            Length 47;
                                                                                     Indels
  47
                                                                                     0
                                                                                   Gaps
```

0

GENERAL INFORMATION:

```
APPLICANT: SILLSON, DAVID S.
APPLICANT: KEEFE, ANTHONY D.
TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES AND
TITLE OF INVENTION: THEREOF
FILE REFERENCE: 00786/388002
CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
SOFTWARE: PASTSEQ for Windows Version 4.0
SEQ ID NO 26
LENGTH: 47
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 24
LENGTH: 61
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
FEATURE: THEOREMATER: ASSOCIATION NUMBER OF SEQ ID NO 24
RESULT 4
US-10-004-381-23
; Sequence 23, Application US/10004381
; Publication No. US20020155578A1
; GENERAL INFORMATION:
                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-004-381-24
; Sequence 24, Application US/10004381
; Publication No. US20020155578A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                    ; OTHER INFORMATION: selected peptide US-10-004-381-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-004-381-26
                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: SZOSTAK, JACK W.
APPLICANT: WILSON, DAVID S.
APPLICANT: KEEFE, ANTHONY D.
TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES AND USES
TITLE OF INVENTION: THEREOF
FILE REFERENCE: 00786/388002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Artificial Sequence FEATURE:
OTHER INFORMATION: selected peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                    61 Ġ
                                                                                                                                                                          47
                                                                                                                                                                                                                                                                                           47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               45;
                                                                                                                                                                        .
                                                                                                                                                                                                                                         MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG 47
                                                                                                                                                                                                                MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPLVQEVEDVDEGLVQMMSGGCKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MDEKTTGWRGGHVVEGLAGELEQLRARLEHHGAGQREPMMSGGCKLG
                                                                                                                                      61
                                                                                                                                                                          47
                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                           93.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94.2%;
95.7%;
                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 243; DB 14;
Pred. No. 3.3e-24;
0; Mismatches 2
                                                                                                                                                                                                                                                                                                           Score 241; DB 14;
Pred. No. 7.9e-24;
                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 14;
                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 47;
                                                                                                                                                                                                                                                                                                                               Length 61;
                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                         14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                   MMSCGCKL
                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                       46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

RESULT 6 US-10-004-381-21

```
APPLICANT: SZOSTAK, JACK W.
APPLICANT: WILSON, DAVID S.
APPLICANT: KEEFE, ANTHONY D.
TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES AND USES
TITLE OF INVENTION: THEREOF
FILE REFERENCE: 00786/388002
CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US/244,541
PRIOR APPLICATION NUMBER: US/244,541
PRIOR FILING DATE: 2000-10-31
PRIOR FILING DATE: 2000-10-31
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 23
LENGTH: 75
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 5
US-10-004-381-22
Sequence 22, App
Publication No.
밁
                                                                   밁
                                                                                                                                                                                                         ; FEATURE:
; OTHER INFORMATION: selected peptide
US-10-004-381-22
                              S
                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-004-381-23
                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 22
                                                                                                                                          Matches
                                                                                                                                                        Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES TITLE OF INVENTION: THEREOF FILE REFERENCE: 00786/388002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: SZOSTAK, JACK W. APPLICANT: WILSON, DAVID S. APPLICANT: KEEFE, ANTHONY D
                                                                                                                                                                                                                                                          LENGTH: 89
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
OTHER INFORMATION:
61 LLDPVEKLLTDWFKKFKNVSMMSGGCKLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             47; Conservative
                                                                                                                                                        Similarity
                                                                                       MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LLDPVEMMSGGCKLG 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----MMSGGCKLG 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPLVQEVEDVDEGLVQDLHGVVAG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP-
                                                                 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPLVQEVEDVDEGLVQDLHGVVAG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/10004381
No. US20020155578A1
                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 selected peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90.7%;
                                                                                                                                                        88.0%;
52.8%;
                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 234; DB 1.
Pred. No. 8e-23;
0; Mismatches
                                                                                                                                        Score 227; DB 14;
Pred. No. 7.7e-22;
0; Mismatches 0;
                                  MMSGGCKLG
89
                                  47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AND USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 75;
                                                                                                                                                                         Length 89;
                                                                                                                                          Indels.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                          42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                        Gaps
                                                                                                         38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             38
                                                                                                                                          1;
```

Sequence 21, Application US/10004381 Publication No. US20020155578A1

```
RESULT 8
US-10-004-381-35
· Sequence 35, Application US/10004381
                                                                                                                          용
                                                                                                                                                                                                                                                                     ; FEATURE:
; OTHER INFORMATION: selected peptide
US-10-004-381-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-004-381-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-004-381-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 21
                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 19, Application US/10004381
Publication No. US20020155578A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: KEBFE, ANTHONY D.
TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES AND USES
TITLE OF INVENTION: THEREOF
FILE REFERENCE: 00786/388002
CURRENT APPLICATION NUMBER: US/10/004/381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR PLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PILE REFERENCE: 00786/388002
CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: STREPTAVIDIN-BINDING TITLE OF INVENTION: THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: SZOSTAK, APPLICANT: WILSON,
                                                                                                                                                                                                                                                                                                                        TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OTHER INFORMATION: selected peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ENGTH: 101
                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 LLDPVEKLLTDWFKKFKNVSKDCKWTFYLEMYDWSGGCKLG 101
                                                                                                                                                                                                   38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMM-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                              MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMM 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SZOSTAK, JACK W. WILSON, DAVID S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPLVQEVEDVDEGLVQDLHGVVAG 60
                                                                                                                          MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPLV 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEEFE, ANTHONY D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WILSON, DAVID S.
                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       82.9%;
                                                                                                                                                                                                                  81.8%;
95.0%;
                                                                                                                                                                                                 2;
                                                                                                                                                                                                                  Score 211; DB 14;
Pred. No. 1.1e-19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 214; DB 14;
Pred. No. 4.3e-20;
                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PEPTIDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 14;
                                                                                                                                                                                                     <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AND
                                                                                                                                                                                                                                      Length 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 101;
                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           54;
                                                                                                                                                                                                     <u>,</u>
                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        40
                                                                                                                                                                                                     0
```

RESULT 10

US-10-004-381-38

Sequence 38, Applica Publication No. US20 GENERAL INFORMATION:

Application US/10004381 No. US20020155578A1

APPLICANT:

SZOSTAK,

K, JACK W. N, DAVID S. , ANTHONY D.

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; OTHER INFORMATION: selected peptide US-10-004-381-35
밁
                                S
                                                                                                                                              ; OTHER INFORMATION: designed protein US-10-004-381-41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-004-381-41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES AND USES TITLE OF INVENTION: THEREOF FILE REFERENCE: 00786/388002
CURRENT APPLICATION UNMEER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION UNMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 35
                                                                                                                                                                                                                                                        SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 41
                                                                       Matches
                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 41, Ap
Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Publication No. US20020155578A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: WILSON, DAVID S.
APPLICANT: KEEFE, ANTHONY D.
TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES
TITLE OF INVENTION: THEREOF
FILE REFERENCE: 00786/388002
                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: SZOSTAK,
APPLICANT: WILSON,
APPLICANT: KEEFE, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: SZOSTAK, JACK W. APPLICANT: WILSON, DAVID S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT
ORGANISM: Artificial
                                                                                                                                                                                                 TYPE: PRT ORGANISM: Artificial Sequence
                                                                                                                                                                                  FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                     LENGTH: 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ENGTH: 38
   378
                                                                       38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    38; Conservative
 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 415
                          MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEEFE, ANTHONY D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application US/10004381
                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US20020155578A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   80.6%; Score 208; 100.0%; Pred. No.
                                                                                         100.0%;
                                                                                                          80.6%;
                                                                       0;
                                                                                         Score 208; DB 14;
; Pred. No. 1.2e-18;
                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8.8e-20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                            AND USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 38;
                                                                                                          Length 426;
                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                       Gaps
                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
RESULT 11
US-10-004-381-27
US-10-004-381-27
Leguence 27, Application US/10004381
Publication No. US20020155578A1
Publication No. US20020155578A1
                                                                                                                                                                                                                                                                                                                                           US-10-004-381-29; Sequence 29, Application US/10004381; Publication No. US20020155578A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OTHER INFORMATION: selected peptide US-10-004-381-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-004-381-38
                                                                      GENERAL INFORMATION:
APPLICANT: SZOSTAK, JACK W.
APPLICANT: WILSON, DAVID S.
APPLICANT: KEEFE, ANTHONY D.
APPLICANT: WILSON, DAVID S.
APPLICANT: WILSON, DA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 38
LENGTH: 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: SZOSTAK, JACK W.
APPLICANT: WILSON, DAVID S.
APPLICANT: KEEFE, ANTHONY D.
TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES
TITLE OF INVENTION: THEREOF
FILE REFERENCE: 00786/388002
CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILE REFERENCE: 00786/388002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OTHER INFORMATION: Designed protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ENGTH: 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES AND USES OF INVENTION: THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   77.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 199; DB 14;
Pred. No. 1.3e-18;
O; Mismatches O;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 208;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.4e-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 479;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; OTHER INFORMATION: selected peptide US-10-004-381-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; OTHER INFORMATION: US-10-004-381-29
APPLICANT: SZOSTAK, JACK W.
APPLICANT: WILSON, DAVID S.
APPLICANT: KEEFE, ANTHONY D.
TITLE OF INVENTION: STREPTAVIDIN-BINDING PE
TITLE OF INVENTION: THEREOF
FILE REFERENCE: 00786/388002
CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
                                                                                                                                                                                                                          US-10-004-381-34
                                                                                                                                                                                                                                               RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-004-381-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 31
                                                                                                                                                                Sequence 34, Application US/10004381 Publication No. US20020155578A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS: 41
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 28, Appropriate Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES TITLE OF INVENTION: THEREOF FILE REFERENCE: 00786/388002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: SZOSTAK, JACK W. APPLICANT: WILSON, DAVID S. APPLICANT: KEEFE, ANTHONY D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: US 60/244,541 PRIOR FILING DATE: 2000-10-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 89
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 29
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                   63
                                                                                                                                                                                                                                                                                                                                                                                                              15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20 ELEQLRARLEHHPQGQREPMMSGGCKLG 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                     KFKNVSKDCKMTFYLEMYDWSGGCKLG
                                                                                                                                                                                                                                                                                                                                                                           EGLAGELEQLRARLEHHPQGQREPLVQEVEDVDEGLVQDLHGVVAGLLDPVEKLLTDWFK 62
                                                                                                                                                                                                                                                                                                                                                                                                              EGLAGELEOLRARLEHHPOGOREPMM------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ELEQLRARLEHHPQGQREPMMSGGCKLG 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/10004381
No. US20020155578A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            selected peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     58.9%; Score 152; DB 14; 100.0%; Pred. No. 1.2e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 133; DB 14;
Pred. No. 1.2e-09;
2; Mismatches 0
                                                                                                                                                                                                                                                                                                                                       SGGCKLG 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                     89
                                                                                               PEPTIDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 14;
                                                                                               AND USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AND USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29
                                                                                                                                                                                                                                                                                                                                                                                                                                                    54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                  40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
APPLICANT: KEEFE, ANTHONY D.

APPLICANT: KEEFE, ANTHONY D.

TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES AND USES
TITLE OF INVENTION: THEREOF
FILE REFERENCE: 00786/388002
CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR FILLING DATE: 2001-10-31
PRIOR PPLICATION NUMBER: US 60/244,541
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2001-10-31

NUMBER OF SEQ ID NOS: 41
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 11
SEQ ID NO 11
FENGTH: 102
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: selected peptide
US-10-004-381-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 15
US-10-004-381-11
US-10-004-381-11
; Sequence 11, Application US/10004381
; Publication No. US20020155578A1
; GENERAL INFORMATION:
; GENERAL INFORMATION:
JACK W.
                                                                                                     밁
Search completed: February 6, 2004, 16:42:54
Job time : 36 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; LENGTH: 44
; TYPE: PRT
; ORGANISM: Artificial Sequence
; PEATURE;
; OTHER INFORMATION: designed peptide
US-10-004-381-34
                                                                                                                                                                                                  Query Match 27.1%; Score 70; DB 14; Length 102; Best Local Similarity 42.9%; Pred. No. 0.2; Matches 18; Conservative 4; Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 36.4%; Score 94; DB 14; Length 44; Best Local Similarity 58.3%; Pred. No. 6.1e-05; Matches 21; Conservative 3; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18 AGELEQLRAR-----LEHHPQGQREPMMSGGCKLG 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        œ
                                                                                                                                                  1 MDEKTTGW--RGGHVVEGLAGELEQLRARLEHHPQGQREPMM 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGPVDQADARLVQQGALQHHPQGDR--MMSGGCKLG 41
                                                                                                  MDEK-THWHERVHHLADG-----LEQHPQGQRRPLV 30
                                                                                                                                                                                                     14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8;
                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                     u
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
```

# THIS PAGE BLANK (USPTO)

```
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
```

OM protein - protein search, using sw model

February 6, 2004, 17:14:57; Search time 21 Seconds (without alignments) 215.235 Million cell updates/sec

Title: Perfect score: Sequence: US-10-004-381-25 47 1 MDEKTTGWRGGHVVEGLAGE.....LEHHPQGQREPMMSGGCKLG 47

Scoring table: OLIGO Gapop 60.0 , Gapext 60.0

Searched: 283308 seqs, 96168682 residues

Word size :

10

Total number of hits satisfying chosen parameters:

0

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database :

PIR\_76:\*
1: pir1:\*
2: pir2:\*
3: pir3:\*
4: pir4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No. Query Score Match Length DB ID

Description

No matches found

Search completed: February 6, 2004, 17:15:32
Job time: 21 secs

### THIS PAGE BLANK (USPTO)

```
GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.
```

OM protein - protein search, using sw model

Run on: February 6, 2004, 17:14:57; Search time 11 Seconds (without alignments) 200.932 Million cell updates/sec

US-10-004-381-25 47

Scoring table: OLIGO Gapop 60.0 , Gapext 60.0

Title:
Perfect score:
Sequence: 1 MDEKTTGWRGGHVVEGLAGE.....LEHHPQGQREPMMSGGCKLG 47

127863 seqs, 47026705 residues

Word size : 10 Searched:

Total number of hits satisfying chosen parameters:

0

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database : SwissProt\_41:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No. Query Score Match Length DB ID

Description

No matches found

Search completed: February 6, 2004, 17:16:43 Job time : 11 secs

#### THIS PAGE BLANK (USPTO)

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                            Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Word size :
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OLIGO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            February 6, 2004, 17:14:57; Search time 35 Seconds (without alignments) 346.528 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-004-381-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        830525 seqs, 258052604 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MDEKTTGWRGGHVVEGLAGE.....LEHHPQGQREPMMSGGCKLG 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10
                                                                                                                                                                                                                                                                                                                                                                                                            SPTREMBL_23:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                     sp_invertebrate:*
sp_mammal:*
sp_mhc:*
                                                                           sp_vertebrate:*
sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                           sp_organelle:*
sp_phage:*
sp_plant:*
                                                                                                                                                                                                                                                                                                                                  sp_archea:*
sp_bacteria:*
sp_fungi:*
sp_human:*
                                                                                                                                                                            sp_rodent:*
sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

Result No.

Score

Query Match Length DB

IJ

Description

SUMMARIES

No matches found

Search completed: February 6, 2004, 17:16:20 Job time: 35 secs

#### THIS PAGE BLANK (USPTO)

```
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table: OLIGO Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title: Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Word size :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein - protein search, using sw model
No matches found
                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                     Query
Score Match Length DB ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-004-381-25
47
1 MDEKTTGWRGGHVVEGLAGE.....LEHHPQGQREPMMSGGCKLG 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   February 6, 2004, 17:15:37; Search time 21 Seconds (without alignments) 94.696 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    328717 seqs, 42310858 residues
                                                                                                                                                                                                                                                                                 Issued_Patent's AA:*

1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/1/iaa/backfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10
                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                     Description
```

Search completed: February 6, 2004, 17:20:15 Job time : 21 secs

#### THIS PAGE BLANK (USPTO)

```
Copyright
GenCore version 5.1.6 (c) 1993 - 2004 Compus
 Compugen Ltd
```

```
Run on:
                                         OM protein - protein search, using sw model
February 6,
```

Perfect score: Title: US-10-004-381-25 2004, 17:16:27; Search time 34 Seconds (without alignments) 289.440 Million cell updates/sec

1 MDEKTTGWRGGHVVEGLAGE.....LEHHPQGQREPMMSGGCKLG

Scoring table: OLIGO Gapop 60.0 , Gapext 60.0

Sequence:

Searched: 801455 seqs, 209382283 residues

Total number of hits satisfying chosen parameters: Word size :

13

5

Minimum DB Maximum DB seq length: 0
seq length: 2000000000

Post-processing: Listing first 45 summaries

Published Applications cgn2\_6/ptodata/1/pubpaa/US07 /cgn2\_6/ptodata/1/pubpaa/US10A PUBCOMB.pep:\*
/cgn2\_6/ptodata/1/pubpaa/US10B PUBCOMB.pep:\*
/cgn2\_6/ptodata/1/pubpaa/US10C PUBCOMB.pep:\*
/cgn2\_6/ptodata/1/pubpaa/US10 NEW\_PUB.pep:\*
/cgn2\_6/ptodata/1/pubpaa/US60\_NEW\_PUB.pep:\*
/cgn2\_6/ptodata/1/pubpaa/US60\_NEW\_PUB.pep:\* cgn2\_6/ptodata/1/pubpaa/US09B\_PUBCOMB.pep:\*
cgn2\_6/ptodata/1/pubpaa/US09C\_PUBCOMB.pep:\*
cgn2\_6/ptodata/1/pubpaa/US09\_NEW\_PUB.pep:\* \_6/ptodata/1/pubpaa/PCT\_NEW\_PUB.pep:\* \_6/ptodata/1/pubpaa/US06\_NEW\_PUB.pep:\* 6/ptodata/1/pubpaa/USO6\_PUBCOMB.pep:\*
6/ptodata/1/pubpaa/USO7\_NEW\_PUB.pep:\*
6/ptodata/1/pubpaa/PCTUS\_PUBCOMB.pep:\* 6/ptodata/1/pubpaa/US09A 6/ptodata/1/pubpaa/US08 6/ptodata/1/pubpaa/US08\_NEW\_PUB.pep: PUBCOMB.pep: PUBCOMB.pep:\*

and is derived by analysis of the total score distribution. Pred. No. No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed.

	13	12	<b>.</b> 11	0 (	9	8	7	6	U	4.	w	2	ш	Result No.	
•	24	28	31	37	38	38	38	38	38	38	38	38	47	Score	
	51.1	59.6	66.0	78.7	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	100.0	Query	P
	. 89	29	47	39	479	426	101	101	89	75	61	38	47	Query Match Length	
	14	14	14	14	14	14	14	14	14	14	14	14	14	DB	
	US-10-004-381-28	US-10-004-381-29	US-10-004-381-26	US-10-004-381-27	US-10-004-381-38	US-10-004-381-41	US-10-004-381-21	US-10-004-381-19	US-10-004-381-22	US-10-004-381-23	US-10-004-381-24	US-10-004-381-35	US-10-004-381-25	ID	
	Sequence 28, App	Sequence 29, App	Sequence 26, App	Sequence 27, App	Sequence 38, App	•	•	Sequence 19, App	•	•	•	Sequence 35, App	Sequence 25, App	Description	
	ψĺ	Ď	ğ	ğ	ğ	Ď	ğ	ğ	ğ	Ď	ğ	ğ	ğ	•	

RESULT 3 US-10-004-381-24

0

## ALIGNMENTS

```
FILE REFERENCE: 00786/380026
CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 25
LENGTH: 47
TYPE: PRT
밁
                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                               ; OTHER INFORMATION: selected peptide US-10-004-381-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-004-381-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-004-381-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-004-381-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 25, Application US/10004381
Publication No. US20020155578A1
GEMERAL INFORMATION:
APPLICANT: SZOSTAK, JACK W.
APPLICANT: WILSON, DAVID S.
APPLICANT: KEEFE, ANTHONY D.
TITLE OF INVENTION: STREEPTAVIDIN-BINDING PEPTIDES
TITLE OF INVENTION: THEREOF
                                                                             Query Match
Best Local Similarity
Matches 38; Conserv
                                                                                                                                                                                                                                                                                       SEQ ID NO 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local (
                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES AND USES TITLE OF INVENTION: THEREOF FILE REFERENCE: 00786/388002
CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR PETILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: SZOSTAK,
APPLICANT: WILSON,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                       LENGTH: 38
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: selected peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 Similarity
47; Conserv
                              MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG 47
MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WILSON, DAVID S. KEEFE, ANTHONY D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Application US/10004381
                                                                             80.9%; Score 38; DB 14; 1 ilarity 100.0%; Pred. No. 5.7e-32; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US20020155578A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JACK W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; Score 47; DB 14; 100.0%; Pred. No. 3.7e-41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                    Length 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AND USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 47;
                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                               0
                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
```

0

Application US/10004381

US20020155578A1

```
RESULT 5
US-10-004-381-22
; Sequence 22, Application US/10004381
; Publication No. US20020155578A1
; GENERAL INFORMATION:
; APPLICANT: SZOSTAK, JACK W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; FEATURE:
; OTHER INFORMATION: selected peptide
US-10-004-381-24
                                                                                                                                                                                                                                                                                                                                                  US-10-004-381-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-004-381-23
                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 41
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 23
LENGTH: 75
TYPE: PRT
                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 23, Application US/10004381 Publication No. US20020155578A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: STREPTAVIDIN-BINDING PRPTIDES AND USES TITLE OF INVENTION: THEREOF FILE REFERENCE: 00786/388002 CURRENT APPLICATION NUMBER: US/10/004,381 CURRENT FILLING DATE: 2001-10-31 PRIOR APPLICATION NUMBER: US 60/244,541 PRIOR FILING DATE: 2000-10-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
NOSFIWARE: FABUSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: WILSON, DAVID S. APPLICANT: KEEFE, ANTHONY D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: SZOSTAK, JACK W.
APPLICANT: WILSON, DAVID S.
APPLICANT: KEEFE, ANTHONY D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: SZOSTAK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILE REFERENCE: 00786/388002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES TITLE OF INVENTION: THEREOF
                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: selected peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: PRT ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ENGTH: 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                        38;
                                                                                                                                                                                                                                 1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80.9%; S llarity 100.0%; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JACK W.
DAVID S.
                                                                                                                                                                                                                                                                                         100.0%;
                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 38; Pred. No.
                                                                                                                                                                                                                                                                                         Score 38;
Pred. No.
                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                red. No. 8.0
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 14; I
8.6e-32;
                                                                                                                                                                                                                                                                                         DB 14; Length 75; 1e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AND USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                        0
```

```
; FEATURE:
; OTHER INFORMATION: selected peptide
US-10-004-381-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; OTHER INFORMATION: selected peptide US-10-004-381-22
                                                                                                                                                                                                          RESULT 7
                                                                                                                                                                                    US-10-004-381-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-004-381-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 19, Application US/10004381
Publication No. US20020155578A1
GENERAL INFORMATION:
APPLICANT: SZOSTAK, JACK W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 41
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 22
                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                   Sequence 21, Ap
Publication No.
                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 19
                     APPLICANT: SZOSTAK, JACK W.
APPLICANT: WILSON, DAVID S.
APPLICANT: KEEFE, ANTHONY D.
TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES
FILE DEPERTMENT ON THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILE REFERENCE: 00786/388002
CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: WILSON, DAVID S.
APPLICANT: KEEFE, ANTHONY D.
TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES AND USES
TITLE OF INVENTION: THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILE REFERENCE: 00786/388002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES AND USES TITLE OF INVENTION: THEREOF
CURRENT APPLICATION NUMBER: US/10/004,381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 101
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 89
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                      MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP
                                                                                                                                                                  Application US/10004381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEEFE, ANTHONY D
                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                 US20020155578A1
                   ON: THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         80.9%; Score 38; DB 14; 100.0%; Pred. No. 1.2e-31;
                                                                                                                                                                                                                                                                                                                                                         80.9%;
                                                                                                                                                                                                                                                                                                                                           <u>,</u>
                                                                                                                                                                                                                                                                                                                                                         Score 38;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ٥.
                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                              DB 14;
                                                                                                                                                                                                                                                                                                                                                             1.3e-31;
                                                                                                                                                                                                                                                                                                                                                                            Length 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 89
                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

CURRENT FILING DATE:

2001-10-31

0

```
RESULT 9
US-10-004-381-38
; Sequence 38, Application US/10004381
; Publication No. US20020155578A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; · OTHER INFORMATION: selected peptide US-10-004-381-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-004-381-41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: SZOSTAK, JACK W.
APPLICANT: WILSON, DAVID S.
APPLICANT: KEEPE, ANTHONY D.
TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES AND USES
TITLE OF INVENTION: THEREOF
FILE REFERENCE: 00786/388002
CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION: "2001-10-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOPTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 41, Ap
Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                      APPLICANT: SZOSTAK, JACK W.
APPLICANT: WILSON, DAVID S.
APPLICANT: KEFE, ANTHONY D.
TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES
TITLE OF INVENTION: THEREOF
FILE REFERENCE: 00786/388002
CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: US 60/244,541 PRIOR FILING DATE: 2000-10-31
                PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQ ID NOS: 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
ORGANISM: Artificial Sequence
PEATURE:
OFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OTHER INFORMATION: designed protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ENGTH:
                                                                                                                                                                                                                                                                                                                                                                     378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          426
                                                                                                                                                                                                                                                                                                                                                                                                         1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                     MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Application US/10004381
No. US20020155578A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ilarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   80.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 38; ; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 38;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 14; Length 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4.7e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.3e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 426;
                                                                                                                                                        AND USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
```

```
APPLICANT: SZOSTAK, JACK W.
APPLICANT: WILSON, DAVID S.
APPLICANT: WESEFE, ANTHONY D.
TITLE OF INVENTION: STREETBAVEDIN-BINDING PEPTIDES AND USES
TITLE OF INVENTION: THEREOF
FILE REFERENCE: 00786/388002
CURRENT APPLICATION UNMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEG ID NOS: 41
SOSTWARE: PastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; OTHER INFORMATION: Designed protein US-10-004-381-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                          US-10-004-381-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-004-381-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-004-381-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 27 LENGTH: 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 38
                                                          SEQ ID NO 26
                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                  Sequence 26, Ap
Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Publication No. US20020155578A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES TITLE OF INVENTION: THEREOF FILE REFERENCE: 00786/388002 CURRENT APPLICATION NUMBER: US/10/004,381 CURRENT FILING DATE: 2001-10-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: SZOSTAK,
APPLICANT: WILSON,
APPLICANT: KEEFE, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 39
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION:
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENGTH:
                                     ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    378 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                           11 GHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 Similarity 100.
38; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                    GHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SZOSTAK, JACK W. WILSON, DAVID S. KEEFE, ANTHONY D.
                                                                                                                                                                                                                                                                                                                                    Application US/10004381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Application US/10004381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                      US20020155578A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          selected peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80.9%; Score 38; DB 14; 100.0%; Pred. No. 5.2e-3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 37; ; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5.2e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6.2e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 479;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
```

0;

0

```
TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES AND USES
TITLE OF INVENTION: THEREOF
FILE REFERENCE: 00786/388002
CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
VIMBER OF SEQ ID NOS: 41
SOFTMARE: FastSEQ for Windows Version 4.0
SEQ ID NO 29
LENGTH: 29
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: selected peptide
US-10-004-381-29
                                                                                                                                                                APPLICANT: SZOSTAK, JACK W.
APPLICANT: WILSON, DAVID S.
APPLICANT: WILSON, DAVID S.
APPLICANT: KEEFE, ANTHON S.
TITLE OF INVENTION: STREPTAVIDIN-BINDING PEPTIDES AND USES
TITLE OF INVENTION: THEREOF
FILE REFERENCE: 00786/388002
CURRENT APPLICATION NUMBER: US/10/004,381
CURRENT FILING DATE: 2001-10-31
CURRENT FILING DATE: 2000-10-31
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR APPLICATION NUMBER: US 60/244,541
PRIOR FILING DATE: 2000-10-31
NUMBER OF SEQ ID NOS: 41
SOPTWARE: FRSUSEQ for Windows Version 4.0
SEQ ID NO 28
LENGTH: 89
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 13
US-10-004-381-28
; Sequence 28, Application US/10004381
; Publication No. US20020155578A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 12
US-10-004-381-29
; Sequence 29, Application US/10004381
; Publication US20020155578A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; PTHER INFORMATION: selected peptide US-10-004-381-26
                                                                        ; OTHER INFORMATION: selected peptide US-10-004-381-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 66.0%; Score 31; DB 14; Length 47; Best Local Similarity 100.0%; Pred. No. 1.1e-24; Matches 31; Conservative 0; Mismatches 0; Indels
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: SZOSTAK, JACK W.
APPLICANT: WILSON, DAVID S.
APPLICANT: KEEFE, ANTHONY D.
                                                                                                                         ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20 ELEQLRARLEHHPQGQREPMMSGGCKLG 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 ELEQLRARLEHHPQGQREPMMSGGCKLG 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            59.6%; Score 28; DB 14; Length 29; ilarity 100.0%; Pred. No. 9e-22; Conservative 0; Mismatches 0; Indels
51.1%; Score 24; DB 14; Length 89; 100.0%; Pred. No. 3.2e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

Search completed: February 6, 2004, 17:21:02 Job time : 35 secs

```
February 6, 2004, 16:38:52; Search time 41 Seconds (without alignments) 181.955 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A Geneseq 19Jun03:*

| SIDSI/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*
| SIDSI/gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*
| SIDSI/gcgdata/geneseqf_embl/AA1981.DAT:*
| SIDSI/gcgdata/geneseqf_embl/AA1982.DAT:*
| SIDSI/gcgdata/geneseqp-embl/AA1983.DAT:*
| SIDSI/gcgdata/geneseqp-embl/AA1983.DAT:*
| SIDSI/gcgdata/geneseqp-embl/AA1989.DAT:*
| SIDSI/gcgdata/geneseqf_embleeqp-embl/AA1980.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1980.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1991.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1991.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1992.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1992.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1992.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1992.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1992.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1993.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1992.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1992.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1992.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1992.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1992.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1993.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1992.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1993.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1993.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1993.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1993.DAT:*
| SIDSI/gcgdata/geneseqf_geneseqp-embl/AA1993.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MDEKTTGWRGGHVVEGLAGE......LEHHPQGQREPMMSGGCKLG 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /SIDS1/gcgdata/geneseg/genesegp-embl/AA2000.DAT:*/SIDS1/gcgdata/geneseg/genesegp-embl/AA2001.DAT:*/SIDS1/gcgdata/geneseg/genesegp-embl/AA2001.DAT:*/SIDS1/gcgdata/geneseg/genesegp-embl/AA2002.DAT:*/SIDS1/gcgdata/geneseg/genesegp-embl/AA2003.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1998.
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1107863
GenCore version 5.1.6
(c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1107863 segs, 158726573 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                     OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-004-381-25
258
                                              Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Perfect 'score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                                                                                                                                                                                  Run on:
```

SUMMARIES		. Length DB ID Description	47 23 ABG67079	47 24 ABU57601	. 47 23	47 24 ABU57602	61 23 ABG67078	61 24 ABU57600 S	75 23 ABG67077	75 24 ABU57599 S	80 23 ABC67076
	ale.	Query Match Length DB		100.0 47	94.2 .47	94.2 47	93.4 61	_	90.7 75	90.7 75	
		Score	258.	258	243	243	241	241	234	234	200
		Result No.	1	7	9	4,	<b>i</b> n	9	, ,	80	a

Novel peptide with high affinity for streptavidin, is expressed as part of fusion protein to facilitate detection, quantitation and purification of desired protein

Synthetic peptide Streptavidin-bindi Streptavidin-bindi	Streptavidin-bindi Streptavidin-bindi	Streptavidin-bindi Streptavidin-bindi	Maltose-binding pr		Maltose-binding pr	Streptavidin-bindi		Synthetic peptide		Synthetic peptide		Synthetic peptide	Streptavidin-bindi	Streptavidin-nonbi	Streptavidin-bindi	Streptavidin-bindi	Streptavidin-bindi	Streptavidin-bindi	Human ORFX protein	Human gastric canc	Novel human diagno	Human helicase-lik	B. coli proliferat	dia	FRAP homolog. Cry	per	#66(	Protein #6008 enco	Human brain expres	one m	Peptide #5981 enco
ABU57598 ABG67075 ABU57597	ABG67073 ABU57595	ABG67087 ABU57609	ABG67091	ABU57613	ABG67089	ABU57611	ABG67081	ABU57603	ABG67083	ABU57605	ABG67082	ABUS7604	ABG67086	ABU57608	ABG67065	ABU57587	ABG67066	ABU57588	ABP09375	AAB63619	ABG25060	ABP34332	AAB15903	ABG25106	AAW40203	ABG54019	ABB39099	ABB24009	AAM59751	AAM72333	AAM19547
2 2 2 2 4 4	23	23	23	24	23	24	53	24	23	24	23	24	23	24	23	24	23	24	23	22	22	23	21	22	19	22	22	22	22	22	22
89 101 101	101	38	426	426	479	479	39	33	29	29	83	83	44	44	102	102	101	101	145	164	741	. 84	342	538	140	147	147	147	147	147	147
88.0 82.9 82.9	81.8 81.8	80.6	9.08	90.8	80.6	90.6	77.1	77.1	58.9	58.9	51.6	51.6	36.4	34.1	27.1		26.4			24.0	m	ന	3	ന	N	N	$^{\circ}$	N	22.9	N	N
227 214 214	211	208	208	208	208	208	199	199	152	152	133	133	94	88	70	70	68	68	63	62	60.5	59.5	59.5	59.5	29	59	59	59	59	. 59	59
10 11 12	13	15	17	18	19	50	21	22	23	24	25	56	27	28	59	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

## ALIGNMENTS

RESULT 1

Streptavidin-binding peptide SB19 truncation mutant #5. Streptavidin-binding peptide; mutant; mutein. ABG67079 standard; Peptide; 47 AA. Wilson DS, Keefe AD; 31-OCT-2000; 2000WO-US41717. 31-OCT-2000; 2000WO-US41717. (GEHO ) GEN HOSPITAL CORP. (first entry) WPI; 2002-500155/53. Escherichia coli. WO200238580-A1. 24-SEP-2002 Szostak JW, 16-MAY-2002. ABG67079; ABG67079 

```
dissociation constant less than 10 mM or 23 nM, where the amino acid sequence of (I) does not contain an HPQ, HPM, HPN or HQP motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (I) is useful for purifying a desired protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the fusion protein and thus purifying the desired protein from the sample. The invention describes a method for producing a streptavidin-binding fusion protein. This sequence represents a truncation mutant of the streptavidin-binding peptide SB-19 isolated from Escherichia coli using a method described in the specification.
                                                                                                                 invention describes a peptide (I) which binds streptavidin with a
Claim 9; Fig 5; 56pp; English
```

47 AA; Sequence

```
Gaps
                                   ö
   Length 47;
                                                                    1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG 47
                                                                                       1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG 47
                                   0; Indels
   100.0%; Score 258; DB 23;
100.0%; Pred. No. 1.7e-28;
iive 0; Mismatches 0;
                                     47; Conservative
Query Match
Best Local Similarity
                                       Matches
                                                                    ò
                                                                                                 셤
```

ö

RESULT 2

ABU57601 standard; Peptide; 47 AA ABU57601;

09-APR-2003 (first entry)

Synthetic peptide SB19 C-terminal deletion mutant, C4.

Streptavidin-binding peptide; mRNA display; peptide library; fusion protein; mutant; mutein; SB19.

Synthetic

US2002155578-A1.

24-OCT-2002.

31-OCT-2001; 2001US-0004381

31-OCT-2000; 2000US-244541P.

SZOS/) SZOSTAK J W. (WILS/) WILSON D S. (KEEF/) KEEFE A D. Keefe AD Szostak JW, Wilson DS,

-ŧ

WPI; 2003-182639/18

Novel peptide which binds streptavidin with high affinity useful as affinity tags for purifying fusion proteins containing proteins of interest

Claim 14; Fig 5; 36pp; English.

The invention relates to a peptide which binds streptavidin with a dissociation constant less than 10 micro M, where the peptide is not disulphide bonded or cyclised, or with a dissociation constant less than 10 micro M, where the amino acid sequence of the peptide does not contain an HPQ, HPM, HPN or HQP motif. The peptides are generated by the mRNA display method to create a library of peptides. Also include are a nucleic acid encoding the peptide, a vector comprising the nucleic acid, a fusion protein (and its encoding nucleic acid/vector) comprising a protein of interest covalently linked to the streptavidin binding ABUS 7601

MANUS 7

```
ö
peptide and detecting the presence of the fusion protein in a sample using streptavidin or streptavidin-containing compounds. The fusion protein (which comprises the desired protein of interest covalently linked to the streptavidin binding peptide) is useful for purifying a protein of interest from a sample, which involves expressing the fusion protein in the sample, contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the fusion protein, thereby purifying the protein of interest from the sample. The present sequence is a mutated version of SB19, a streptavidin binding peptide of the invention. The mutants comprise 3 N-terminal deletions, a creminal deletions and a truncated N-terminal peptide with point
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention describes a peptide (I) which binds streptavidin with a dissociation constant less than 10 muM or 23 nM, where the amino acid aguance of (I) does not contain an HPQ, HPM, HPM or HQP motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (I) is useful for purifying a desired protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein, and thus purifying the desired protein from the streptavidin, isolating the desired protein from the sample. The invention describes a method for producing a streptavidin-binding fusion protein. This sequence represents a truncation mutant of the streptavidin-binding peptide SB-19 isolated from Escherichia coli using a method described in the specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel peptide with high affinity for streptavidin, is expressed as part of fusion protein to facilitate detection, quantitation and purification of desired protein
                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                 100.0%; Score 258; DB 24; Length 47; 100.0%; Pred. No. 1.7e-28; ive 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                    47
                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MDEKTIGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG
                                                                                                                                                                                                                                                                                                                                                                                                                    1 MDEKTIGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Streptavidin-binding peptide SB19 truncation mutant #6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Streptavidin-binding peptide; mutant; mutein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ź
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Szostak JW, Wilson DS, Keefe AD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABG67080 standard; Peptide; 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 9; Fig 5; 56pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GEHO ) GEN HOSPITAL CORP.
                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2002-500155/53.
                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                             47 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200238580-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                            47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16-MAY-2002.
                                                                                                                                                                                                                                                       mutations.
                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABG67080;
                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABG67080
        8$333333333333333
                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

m

ö

Gaps

ö

Indels

94.2%; Score 243; DB 24; 95.7%; Pred. No. 2.2e-26; iive 0; Mismatches 2;

Conservative

45;

ö

Gaps

.

Similarity

Query Match Local Best Loc Matches

Length 47;

```
The invention relates to a peptide which binds streptavidin with a dissociation constant less than 10 micro M, where the peptide is not dissociation constant less than 10 micro M, where the amino acid sequence of the peptide does not contain an HPQ. HPM. HPM or HQP motif. The peptides are generated by the mRNA display method to create a library of peptides. Also include are a nucleic acid encoding the peptide, a vector comprising the nucleic acid encoding the peptide, a vector comprising the nucleic acid, protein of interest covalently linked to the streptavidin binding peptide and detecting the presence of the fusion protein in a sample using streptavidin or streptavidin-containing compounds. The fusion protein (which comprises the desired protein of interest covalently linked to the streptavidin binding peptide) is useful for purifying a protein of interest from a sample, which involves expressing the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     fusion protein in the sample, contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the fusion protein, thereby purifying the protein of interest from the sample. The present sequence is a mutated version of SB19, a streptavidin binding peptide of the invention. The mutants comprise 3 N-terminal deletions,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C-terminal deletions and a truncated N-terminal peptide with point
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Novel peptide which binds streptavidin with high affinity useful as affinity tags for purifying fusion proteins containing proteins of
                                                                                                                                                                                                                                                                                                                                                                                      Streptavidin-binding peptide, mRNA display, peptide library,
                                                                                                                                                                                                                                                                                                                                                    Streptavidin-binding synthetic peptide SB19 point mutant M1.
                                                                                                           47
                                                                                                                                1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHGAGQREPMASGGCKLG 47
                                                                       2; Indel's
                                                                                                           1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG
                                  Score 243; DB 23;
Pred. No. 2.2e-26;
0; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                            fusion protein; mutant; mutein; SB19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Keefe AD;
                                                                                                                                                                                                                                        ABU57602 standard; Peptide; 47 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 14; Fig 5; 36pp; English.
                                  94.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31-OCT-2001; 2001US-0004381.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31-OCT-2000; 2000US-244541P.
                                                                                                                                                                                                                                                                                                               09-APR-2003 (first entry)
                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Szostak JW, Wilson DS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (SZOS/) SZOSTAK J W. (WILS/) WILSON D S. (KEEF/) KEEFE A D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2003-182639/18
                                                     Local Similarity
47 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US2002155578-A1.
                                                                         45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                Synthetic.
                                                                                                                                                                                                                                                                             ABU57602;
 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          interest
                                                                          Matches
                                                                                                                                                                                                                     g
```

```
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention describes a peptide (I) which binds streptavidin with a dissociation constant less than 10 muM or 23 nM, where the amino acid sequence of (I) does not contain an HPQ, HPM, HPM or HQP motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (I) is useful for purifying a desired protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the desired protein from the sumple. The protein, and thus purifying the desired protein from the sample. The invention describes a method for producing a streptavidin-binding fusion protein. This sequence represents a truncation mutant of the protein binding peptide SB-19 isolated from Escherichia coli using a method described in the specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel peptide with high affinity for streptavidin, is expressed as part of fusion protein to facilitate detection, quantitation and purification of desired protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP---------MMSGGCKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPLVQEVEDVDEGLVQWMSGGCKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Indels 14; Gaps
47
                              47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 61;
                     1 MDEKTIGWRGGHVVEGLAGELEQLRARLEHHGAGQREPMMSGGCKLG
1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG
                                                                                                                                                                                                                           Streptavidin-binding peptide SB19 truncation mutant #4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93.4%; Score 241; DB 23; 77.0%; Pred. No. 5.6e-26;
                                                                                                                                                                                                                                                            Streptavidin-binding peptide; mutant; mutein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Szostak JW, Wilson DS, Keefe AD;
                                                                                                                    ABG67078 standard; Peptide; 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 9; Fig 5; 56pp; English
                                                                                                                                                                                                                                                                                                                                                                                                     31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                                                                                                                                                                                                                                                                        31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (GEHO ) GEN HOSPITAL CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    l Similarity 77.0
47; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2002-500155/53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 AA;
                                                                                                                                                                                                                                                                                              Escherichia coli.
                                                                                                                                                                                                                                                                                                                                WO200238580-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           47 G 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                          24-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                   16-MAY-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            - ტ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                        ABG67078;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .19
                                                                                     RESULT 5
                                                                                                   ABG67078
                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
 ઠે
```

RESULT 6

47 AA;

RESULT 7

ABG67077

```
The invention relates to a peptide which binds streptavidin with a dissociation constant less than 10 micro M, where the peptide is not dissociation constant less than 10 micro M, where the peptide is not disulphide bonded or cyclised, or with a dissociation constant less than 10 micro M, where the amino acid sequence of the peptide does not contain an HPQ, HPW, HPN or HQP micli. The peptides are generated by the mRNA display method to create a library of peptides. Also include are a nucleic acid encoding the peptide, a vector comprising the nucleic acid, estimated and detecting the presence of the fusion protein of interest covalently linked to the streptavidin containing compounds. The fusion protein (which comprises the desired protein of interest covalently compounds to the streptavidin-containing compounds. The fusion protein in the sample, contacting the sample with streptavidin CC fusion protein in the sample, contacting the sample with streptavidin the fusion protein contacting the sample with streptavidin the fusion protein contacting the sample with streptavidin the fusion protein contacting the sample with streptavidin contacting the sam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ein, thereby purifying the protein of interest from the sample. present sequence is a mutated version of SB19, a streptavidin binding ide of the invention. The mutants comprise 3 N-terminal deletions,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complex and recovering the fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C-terminal deletions and a truncated N-terminal peptide with point
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel peptide which binds streptavidin with high affinity useful as affinity tags for purifying fusion proteins of
                                                                                                                                                                                                                  Streptavidin-binding peptide; mRNA display; peptide library; fusion protein; mutant; mutein; SB19.
                                                                                                                                                                     Synthetic peptide SB19 C-terminal deletion mutant, C3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 241; DB 24;
Pred. No. 5.6e-26;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 isolating the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Keefe AD;
                         ABUS7600 standard; Peptide; 61 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 14; Fig 5; 36pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                       31-OCT-2001; 2001US-0004381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31-OCT-2000; 2000US-244541P.
                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   47; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Szostak JW, Wilson DS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the streptavidin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (SZOS/) SZOSTAK J W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WILSON D S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2003-182639/18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEEF/) KEEFE A D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 AA;
                                                                                                                                                                                                                                                                                                                                          US2002155578-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                        09-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                          24-OCT-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ö
                                                                                                                                                                                                                                                                                           Synthetic.
                                                                        ABU57600;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mutations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  interest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (MILS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
The invention describes a peptide (I) which binds streptavidin with a dissociation constant less than 10 muM or 23 nM, where the amino acid sequence of (I) does not contain an HPO, HPM, HPM or HQD motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (I) is useful for purifying a desired rocalitions that allow complex formation between the fusion protein and the streptavidin, isolating the sample with streptavidin under the streptavidin, isolating the desired protein from the sample. The protein, and thus purifying the desired protein from the sample. The invention describes a method for producing a streptavidin-binding peptide SB-19 isolated from Escherichia coli using a method described in the specification.
                                                                                                                                                                                                                                                                                                                                                                                                                              Novel peptide with high affinity for streptavidin, is expressed as part of fusion protein to facilitate detection, quantitation and purification of desired protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MDEKTTGWRGGHVVGGLAGELEQLRARLEHHPQGQREPLVQEVEDVDEGLVQDLHGVVAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gape
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                              Streptavidin-binding peptide SB19 truncation mutant #3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Synthetic peptide SB19 C-terminal deletion mutant, C2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                90.7%; Score 234; DB 23;
62.7%; Pred. No. 6.7e-25;
ive 0; Mismatches 0;
                                                                                                                               Streptavidin-binding peptide; mutant; mutein.
                                                                                                                                                                                                                                                                                                                                                                   DS, Keefe AD;
ABG67077 standard; Peptide; 75 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABU57599 standard; Peptide; 75 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 9; Fig 5; 56pp; English
                                                                                                                                                                                                                                                                31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                                                                                                                                31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                 (GEHO ) GEN HOSPITAL CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity 62.7
47; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  39 -----MMSGGCKLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 LLDPVEMMSGGCKLG
                                                                                                                                                                                                                                                                                                                                                                  Wilson
                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2002-500155/53.
                                                                                                                                                               Escherichia coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  75 AA;
                                                                                                                                                                                              40200238580-A1.
                                                               24-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-APR-2003
                                                                                                                                                                                                                                                                                                                                                                Szostak JW,
                                                                                                                                                                                                                                 16-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABU57599;
                                ABG67077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABUS 7599
                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
```

1;

38 9

> TXDSSWIM-----Indels 14; Gaps

```
display method to create a library of peptides regenerated by the mENA display method to create a library of peptides. Also include are a nucleic acid encoding the peptide, a vector comprising the nucleic acid, a fusion protein (and its encoding nucleic acid/vector) comprising a protein of interest covalently linked to the streptavidin binding peptide and detecting the presence of the fusion protein in a sample cusing streptavidin or streptavidin-containing compounds. The fusion protein of interest from a sample fusion protein of interest from a sample, which comprises the desired protein of interest covalently linked to the streptavidin binding peptide) is useful for purifying a protein of interest from a sample, which involves expressing the fusion under conditions that allow complex formation between the fusion protein conditions that allow complex formation between the fusion protein protein, thereby purifying the complex and recovering the fusion protein, thereby purifying the protein of interest from the sample. The present sequence is a mutated version of SB19, a streptavidin binding peptide of the invention. The mutants comprise 3 N-terminal deletions,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       dissociation constant less than 10 micro M, where the peptide is not disulphide bonded or cyclised, or with a dissociation constant less than 10 micro M, where the amino acid sequence of the peptide does not contain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C-terminal deletions and a truncated N-terminal peptide with point
                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel peptide which binds streptavidin with high affinity useful as affinity tags for purifying fusion proteins containing proteins of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to a peptide which binds streptavidin with a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28;
              Streptavidin-binding peptide; mRNA display; peptide library; fusion protein; mutant; mutein; SB19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90.7%; Score 234; DB 24;
62.7%; Pred. No. 6.7e-25;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MDEKTTGWRGGHVVEGLAGELEOLRARLEHHPOGOREP-
                                                                                                                                                                                                                                                                                                                                                               Keefe AD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'ABG67076 standard; Peptide; 89 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 14; Fig 5; 36pp; English.
                                                                                                                                                                                                31-OCT-2001; 2001US-0004381
                                                                                                                                                                                                                                        31-OCT-2000; 2000US-244541P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39 ----- MMSGGCKLG 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 LLDPVEMMSGGCKLG 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24-8EP-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     47; Conservative
                                                                                                                                                                                                                                                                                                                                                             Szostak JW, Wilson DS,
                                                                                                                                                                                                                                                                             (SZOS/) SZOSTAK J W. (WILS/) WILSON D S.
                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2003-182639/18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                     KEEFE A D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75 AA;
                                                                                                                     US2002155578-A1.
                                                                                                                                                            24-OCT-2002
                                                                             Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mutations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABG67076;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    interest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                     KEEF/)
원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
```

```
protein. This sequence represents a truncation mutant of the streptavidin-binding peptide SB-19 isolated from Escherichia coli using a method described in the specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention describes a peptide (I) which binds streptavidin with a dissociation constant less than 10 muM or 23 nM, where the amino acid sequence of (I) does not contain an HPO, HPM, HPN or HQP motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (I) is useful for purifying a desired protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the fusion protein, and thus purifying the desired protein from the sample. The invention describes a method for producing a streptavidin-binding fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPLVQEVEDVDEGLVQDLHGVVAG 60
                                                                                                                                                                                                                                                                                                                                       Novel peptide with high affinity for streptavidin, is expressed as part of fusion protein to facilitate detection, quantitation and purification of desired protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Streptavidin-binding peptide; mRNA display; peptide library; fusion protein; mutant; mutein; SB19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
               Streptavidin-binding peptide SB19 truncation mutant #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic peptide SB19 C-terminal deletion mutant,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88.0%; Score 227; DB 23; 52.8%; Pred. No. 7.7e-24; ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP
                                           Streptavidin-binding peptide; mutant; mutein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 LLDPVEKLLTDWFKKFKNVSMMSGGCKLG 89
                                                                                                                                                                                                                                                                          Wilson DS, Keefe AD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABU57598 standard; Peptide; 89 AA.
                                                                                                                                                                                                                                                                                                                                                                                                         Claim 9; Fig 5; 56pp; English.
                                                                                                                                                                            31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                                            31-OCT-2000; 2000WO-US41717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                          (GEHO ) GEN HOSPITAL
                                                                                                                                                                                                                                                                                                           WPI; 2002-500155/53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
nes 47; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        89 AA;
                                                                             Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US2002155578-A1
                                                                                                             WO200238580-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09-APR-2003
                                                                                                                                                                                                                                                                          Szostak JW,
                                                                                                                                            16-MAY-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABU57598;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABU57598
셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

38 9

Gaps

```
ABU57597 standard; Peptide; 101 AA
                                                                                                                                                                                             Keefe AD;
                                                                                                                                                                                                                                                                                                                                                 Claim 9; Fig 5; 56pp; English.
                                                                           31-OCT-2000; 2000WO-US41717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31-OCT-2001; 2001US-0004381.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31-OCT-2000; 2000US-244541P.
                                                                                                                 31-OCT-2000; 2000WO-US41717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                     (GEHO ) GEN HOSPITAL CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                               WPI; 2002-500155/53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (SZOS/) SZOSTAK J W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
Les 45; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     41 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US2002155578-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fusion protein.
 WO200238580-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   09-APR-2003
                                                                                                                                                                                           Szostak JW,
                                     16-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABU57597;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABU57597
 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to a peptide which binds streptavidin with a dissociation constant less than 10 micro M, where the peptide is not dissociation constant less than 10 micro M, where the peptide is not constant less than 10 micro M, where the amino acid sequence of the peptide does not contain an HPO, HPM, HPN or HQP mclif. The peptides are generated by the mRNh display method to create a library of peptides. Also include are a rucleic acid encoding the peptide, a vector comprising the nucleic acid encoding the peptide. A vector comprising a protein of interest covalently linked to the streptavidin binding peptide and detecting the presence of the fusion protein in a sample using streptavidin or streptavidin-containing compounds. The fusion protein (which comprises the desired protein of interest covalently linked to the streptavidin binding peptide) is useful for purifying a protein of interest from a sample, which involves expressing the clusion protein in the sample, contacting the sample with streptavidin cunder conditions that allow complex formation between the fusion protein protein, thereby purifying the complex and recovering the fusion protein, thereby purifying the protein of interest from the sample. The protein of interest from the sample of the protein between the fusion protein protein, thereby purifying the protein of interest from the sample. The present sequence is a mutated version of 5819, a streptavidin peptide of the invention. The mutants comprise 3 Neterminal deletions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C-terminal deletions and a truncated N-terminal peptide with point
                                                                                                                                                                                                                                                                 Novel peptide which binds streptavidin with high affinity useful as affinity tags for purifying fusion proteins containing proteins of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Indels 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Streptavidin-binding peptide SB19 truncation mutant #1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 227; DB 24;
Pred. No. 7.7e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Streptavidin-binding peptide; mutant; mutein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LLDPVEKLLTDWFKKFKNVSMMSGGCKLG 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ------MMSGGCKLG 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABG67075 standard; Peptide; 101 AA
                                                                                                                                                                                             Keefe AD;
                                                                                                                                                                                                                                                                                                                                                 Claim 14; Fig 5; 36pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       88.0%;
                                     31-OCT-2001; 2001US-0004381.
                                                                           31-OCT-2000; 2000US-244541P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24-SEP-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             47; Conservative
                                                                                                                                                                                           Szostak JW, Wilson DS,
                                                                                                             (SZOS/) SZOSTAK J W. (WILS/) WILSON D S. (KEEF/) KEEFE A D.
                                                                                                                                                                                                                               WPI; 2003-182639/18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   89 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Escherichia coli
24-OCT-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mutations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABG67075;
                                                                                                                                                                                                                                                                                                             interest
```

g ઠે 셤

```
The invention describes a peptide (I) which binds streptavidin with a dissociation constant less than 10 muM or 23 nM, where the amino acid sequence of (I) does not contain an HPQ, HPM, HPM or HQP motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (I) is useful for purifying a desired protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the fusion protein, and thus purifying the desired protein from the sample. The invention describes a method for producing a streptavidin-binding fusion protein. This sequence represents a truncation mutant of the streptavidin-binding peptide $81.9 isolated from Escherichia coli using a method described in the specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPLVQEVEDVDEGLVQDLHGVVAG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 40
Novel peptide with high affinity for streptavidin, is expressed as part-
of fusion protein to facilitate detection, quantitation and
purification of desired protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Streptavidin-binding synthetic peptide SB19 full length peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 82.9%; Score 214; DB 23; Length 101;
44.6%; Pred. No. 5.8e-22;
ive 2; Mismatches 0; Indels 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Streptavidin-binding peptide; mRNA display; peptide library;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMM------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 LLDPVEKLLTDWFKKFKNVSKDCKMTFYLEMYDWSGGCKLG 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----- SGGCKLG 47
```

```
protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the fusion protein, and thus purifying the desired protein from the sample. The invention describes a method for producing a streptavidin-binding fusion protein. This sequence represents a streptavidin-binding peptide isolated from Rscherichia coli using a method described in the specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to a peptide which binds streptavidin with a dissociation constant less than 10 micro M, where the peptide is not disulphide bonded or cyclised, or with a dissociation constant less than
                                                Novel peptide with high affinity for streptavidin, is expressed as part of fusion protein to facilitate detection, quantitation and purification of desired protein
                                                                                                                                                      The invention describes a peptide (I) which binds streptavidin with a dissociation constant less than 10 muM or 23 nM, where the amino acid sequence of (I) does not contain an HPO, HPM, HPM or HOP motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (I) is useful for purifying a desired
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel peptide which binds streptavidin with high affinity useful as affinity tags for purifying fusion proteins containing proteins of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Streptavidin-binding peptide; mRNA display; peptide library;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MDEKTIGWRGGHVVEGLAGELEQLRARLEHHPQGQREPLV
                                                                                                                                                                                                                                                                                                                                                                                                                                   81.8%; Score 211; DB 23;
95.0%; Pred. No. 1.5e-21;
ive 2; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Streptavidin-binding synthetic peptide SB19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABUS7595 standard; Peptide; 101 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 14; Fig 3; 36pp; English.
                                                                                                                          Claim 9; Fig 3; 56pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31-OCT-2001; 2001US-0004381.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31-OCT-2000; 2000US-244541P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 95.0
Matches 38; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Szostak JW, Wilson DS,
                WPI; 2002-500155/53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SZOS/) SZOSTAK J W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2003-182639/18.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WILSON D S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (WILS/) WILSON D S (KEEF/) KEEFE A D.
                                                                                                                                                                                                                                                                                                                                                                                                   101 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US2002155578-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-OCT-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABU57595;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            interest
 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
a
                                                                                                                                                                                                                          The invention relates to a peptide which binds streptavidin with a dissociation constant less than 10 micro M, where the peptide is not dissociation constant less than 10 micro M, where the peptide is not one for the increase of the peptide does not contain 10 micro M, where the amino acid sequence of the peptide does not contain an HPQ, HPM, HPN or HQP motif. The peptides are generated by the mRNA can display method to create a library of peptides. Also include are a nucleic acid encoding the peptide, a vector comprising the nucleic acid, a fusion protein (and its encoding nucleic acid/vector) comprising a protein of interest covalently linked to the streptavidin binding peptide and detecting the presence of the fusion protein in a sample using streptavidin or streptavidin-containing compounds. The fusion protein (which comprises the desired protein of interest covalently contained by a useful for purifying a protein of interest from a sample, which involves expressing the fusion protein in the sample, contacting the sample with streptavidin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein, thereby purifying the protein of interest from the sample.
The present sequence is a streptavidin binding peptide of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                      Novel peptide which binds streptavidin with high affinity useful ar
affinity tags for purifying fusion proteins containing proteins of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     82.9%; Score 214; DB 24; Length 101; 44.6%; Pred. No. 5.8e-22; ive 2; Mismatches 0; Indels 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMM-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 LLDPVEKLLTDWFKKFKNVSKDCKMTFYLEMYDW$GGCKLG 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----SGGCKLG 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABG67073 standard, Peptide, 101 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Streptavidin-binding peptide SB19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Szostak JW, Wilson DS, Keefe AD;
                                                    Keefe AD
                                                                                                                                                                                             Claim 14; Fig 5; 36pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Streptavidin-binding peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31-OCT-2000; 2000WO-US41717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-SEP-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GEHO ) GEN HOSPITAL CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45; Conservative
                                                  Szostak JW, Wilson DS,
(WILS/) WILSON D S. (KEEF/) KEEFE A D.
                                                                                      VPI; 2003-182639/18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sest Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence. 101 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200238580-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABG67073;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                               interest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
 ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
```

ö

Gaps

; 0

0; Indels 40 40

Length 101;

not contain

does

```
Inked to the streptavidin binding peptide) is useful for purifying a protein of interest from a sample, which involves expressing the fusion protein in the sample, contacting the sample with streptavidin and the streptavidin isolating the complex formation between the fusion protein protein, thereby purifying the protein of interest from the sample. The present sequence is a streptavidin binding peptide of the invention.
                       an HPQ, HPM, HPN or HQP motif. The peptides are generated by the mRNA display method to create a library of peptides. Also include are a nucleic acid encoding the peptide, a vector comprising the nucleic acid, taken protein (and its encoding nucleic acid/vector) comprising a protein of interest covalently linked to the streptavidin binding peptide and detecting the presence of the fusion protein in a sample using streptavidin or streptavidin-containing compounds. The fusion protein (which comprises the desired protein of interest covalently
of the peptide
where the amino acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101 AA;
  micro M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
255555555555555555555888
```

```
ö
                                      Gaps
                                      ö
Score 211; DB 24; Length 101;
Pred. No. 1.5e-21;
2; Mismatches 0; Indels (
                                                                        1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMM 40
                                                                                                           MDEKTIGWRGGHVVEGLAGELEOLRARLEHHPOGOREPLV 40
Query Match
Best Local Similarity 95.0%;
Matches 38; Conservative
                                                                          ઠે
                                                                                                         g
```

ABG67087 standard; Peptide; 38 AA. ABG67087; RESULT 15 ABG67087 

24-SEP-2002 (first entry)

Streptavidin-binding peptide and affinity tag.

Streptavidin-binding peptide

Synthetic.

WO200238580-A1

16-MAY-2002.

31-OCT-2000; 2000WO-US41717

(GEHO ) GEN HOSPITAL CORP.

31-OCT-2000; 2000WO-US41717

Keefe AD; Szostak JW, Wilson DS, WPI; 2002-500155/53.

Claim 13; Fig 7A; 56pp; English

Novel peptide with high affinity for streptavidin, is expressed as part of fusion protein to facilitate detection, quantitation and purification of desired protein

The invention describes a peptide (I) which binds streptavidin with a dissociation constant less than 10 muM or 23 nM, where the amino acid sequence of (I) does not contain an HPQ, HPM, HPN or HQP motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the fusion protein and the streptavidin, and thus purifying the desired protein from the sample. The invention describes a method for producing a streptavidin-binding fusion protein. This sequence represents a streptavidin-binding fusion

```
ö
the creation of streptavidin-binding DNA-tagged peptide described in the
                                                                                   Gaps
                                                                                   0
                                                           Length 38;
                                                                                   Indels
                                                                                                                          1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                          1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                     ..
0
                                                           Score 208; DB 23;
Pred. No. 1.3e-21;
                                                    80.6%; Scor.
100.0%; Pred. No. 1...
0; Mismatches
                                                                       l Similarity 100.
38; Conservative
                                    38 AA;
             invention.
                                                          Query Match
Best Local S
Matches 38
                                    Sequence
 ន្តដូល
                                                                                                             ò
                                                                                                                                  g
```

Search completed: February 6, 2004, 16:40:31

Job time : 61 secs

```
GenCore version 5.1.6
(c) 1993 - 2004 Compugen Ltd.
                    Copyright
```

- protein search, using sw model OM protein February 6, 2004, 17:14:57; Search time 41 Seconds (without alignments) 181.955 Million cell updates/sec Run on:

US-10-004-381-25

1 MDEKTTGWRGGHVVEGLAGE.....LEHHPQGQREPMMSGGCKLG 47 Perfect score:

Sequence:

Scoring table:

OLIGO Gapop 60.0 , Gapext

60.0

1107863 seqs, 158726573 residues Searched:

9 Word size : 56

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Total number of hits satisfying chosen parameters:

Post-processing: Listing first 45 summaries

Database :

| SIDSI/gcgdata/geneseq/geneseqp-embl/AA1982. | SIDSI/gcgdata/geneseq/geneseqp-embl/AA1983. | SIDSI/gcgdata/geneseq/geneseqp-embl/AA1983. | SIDSI/gcgdata/geneseq/geneseqp-embl/AA1985. | SIDSI/gcgdata/geneseq/geneseqp-embl/AA1986. | SIDSI/gcgdata/geneseq/geneseqp-embl/AA1986. | SIDSI/gcgdata/geneseq/geneseqp-embl/AA1987. A\_Geneseq\_19Jun03:\* .: /SIDS1/gcgdata/geneseq/ :: /SIDS1/gcgdata/geneseq/

/AA1989.DAT:\* /gcgdata/geneseq/geneseqp-embl SIDS1,

/SIDS1/gcgdata/geneseq/geneseqp-embl/A11990 /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1991 /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1992

.DAT: \*

.DAT: DAT:

/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1996.DAT:\* /geneseq/geneseqp-embl/AA1995 /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1993 /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1994 /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1995 /SIDS1,

.DAT:

DAT: \*

/gcgdata/geneseg/genesegp-embl/AA1998 /geneseq/geneseqp-embl/AA200 /genesed/genesedp-embl denesed/genesedp-emp /gcgdata/ /ccddata/ /SIDS1/gcgdata, /SIDS1 /SIDS1

.DAT:\* DAT: \*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

/SIDS1/gcgdata/geneseq/geneseqp-embl/AA2003.DAT:\*

Description	Streptavidin-bindi	Synthetic peptide	Streptavidin-bindi	Streptavidin-bindi	Streptavidin-bindi	Synthetic peptide	Streptavidin-bindi	Synthetic peptide	Streptavidin-bindi
QI	ABG67079	ABU57601	ABG67087	ABU57609	ABG67078	ABU57600	ABG67077	ABU57599	ABG67076
DB	23	24	23	24	23	24	23	24	23
* Query e Match Length DB I	47	47	38	38	61	61	75	75	83
% Query Match	100.0	100.0	80.9	80.9	80.9	80.9	80.9	80.9	80.9
Score	47	47	38	38	38	38	38	38	. 38
Result No.		8	e	4	'n	9	7	œ	σ,

Synthetic peptide Streptavidin-bindi Streptavidin-bindi Streptavidin-bindi Streptavidin-bindi Maltose-binding pr Streptavidin-bindi Maltose-binding pr Streptavidin-bindi Streptavidin-bindi Streptavidin-bindi Synthetic peptide Streptavidin-bindi Streptavidin-bindi Streptavidin-bindi Streptavidin-bindi	Synthetic peptide Streptavidin-bindi Synthetic peptide
ABU5.7598 ABG6.7073 ABG6.7075 ABG5.7075 ABG5.7091 ABG5.7091 ABG5.7091 ABG5.7091 ABG5.7081 ABG5.7081 ABG5.7081 ABG5.7081 ABG5.7081 ABG5.7080 ABG5.7080 ABG5.7080	ABU57605 ABG67082 ABU57604
46644646464646	24 24 24
89 11011 11011 11011 1001 1001 1001 1001	8 8 8 8 8 8
8888888888 000000000000000000000000000	59.6 51.1 51.1
2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	2 4 7 7 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
2210987483210	24 25 26

## ALIGNMENTS

ABG67079 standard; Peptide; 47 AA. RESULT 1 ABG67079

ABG67079;

(first entry) 24-SEP-2002

Streptavidin-binding peptide SB19 truncation mutant #5.

Streptavidin-binding peptide; mutant; mutein.

Escherichia coli

WO200238580-A1.

16-MAY-2002.

31-OCT-2000; 2000WO-US41717.

31-OCT-2000; 2000WO-US41717.

(GEHO ) GEN HOSPITAL CORP.

Keefe AD; Wilson DS, Szostak JW,

WPI; 2002-500155/53.

Novel peptide with high affinity for streptavidin, is expressed as part of fusion protein to facilitate detection, quantitation and purification of desired protein 

Claim 9; Fig 5; 56pp; English.

The invention describes a peptide (I) which binds streptavidin with a dissociation constant less than 10 muM or 23 mM, where the amino acid sequence of (I) does not contain an HPQ, HPM, HPM or HQP motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (I) is useful for purifying a desired protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the fusion protein, and thus purifying the desired protein from the sample. The invention describes a method for producing a streptavidin-binding fusion protein. This sequence represents a truncation mutant of the method described in the specification.

47 AA; Sequence 100.0%; Score 47; DB 23; Length 47; Query Match

1 MDEKTIGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG 47

ઠે 원

```
The invention relates to a peptide which binds streptavidin with a dissociation constant less than 10 micro M, where the peptide is not disulphide bonded or cyclised, or with a dissociation constant less than 10 micro M, where the amino acid sequence of the peptide does not contain 10 micro M, where the mino acid sequence of the peptide does not contain 20 micro M, where the mino acid sequence of the peptide are a nucleic acid encoding the peptide. Also include are a nucleic acid encoding the peptide, a vector comprising the nucleic acid, a fusion protein (and its encoding nucleic acid/vector) comprising a protein of interest covalently linked to the streptavidin binding peptide and detecting the presence of the fusion protein in a sample using streptavidin or streptavidin-containing compounds. The fusion protein (which comprises the desired protein of interest covalently involves expressing the protein of interest from a sample, which involves expressing the conditions that allow complex formation between the fusion protein complex formation or the fusion protein in the sample, contacting the sample with streptavidin
                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          present sequence is a mutated version of SB19, a streptavidin binding ide of the invention. The mutants comprise 3 N-terminal deletions,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           isolating the complex and recovering the fusion
                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C-terminal deletions and a truncated N-terminal peptide with point
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          thereby purifying the protein of interest from the sample.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel peptide which binds streptavidin with high affinity useful as
affinity tags for purifying fusion proteins containing proteins of
                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Streptavidin-binding peptide; mRNA display; peptide library; fusion protein; mutant; mutein; SB19.
                                                                                                                   47
                                                                                                                                                      1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMWSGGCKLG 47
                                                 IndelB
                                                                                                                   MDEKTIGWRGGHVVEGLAGELEQLRARLEHHPQGQREPMMSGGCKLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Synthetic peptide SB19 C-terminal deletion mutant, C4.
                                             ö
          Pred. No. 1.3e-42;
100.0%; Prea. ....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Keefe AD;
                                                                                                                                                                                                                                                                                                                                                       ABUS7601 standard; Peptide; 47 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 14; Fig 5; 36pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31-OCT-2001; 2001US-0004381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31-OCT-2000; 2000US-244541P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09-APR-2003 (first entry)
              Best Local Similarity 100.
Matches 47; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Szostak JW, Wilson DS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the streptavidin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (SZOS/) SZOSTAK J W. (WILS/) WILSON D S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2003-182639/18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEEFE A D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  47 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US2002155578-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-OCT-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 peptide of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                       ABU57601;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mutations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 interest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEEF/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                 ABUINT OF THE PROPERTY OF THE 
                                                                                                                                                                                                                                                                                     RESULT 2
                                                                                                                   ઠે
                                                                                                                                                                               셤
```

```
dissociation constant less than 10 mum or 23 nM, where the amino acid sequence of (1) does not contain an HPO, HPM, HPN or HOP motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (1) is useful for purifying a desired protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the fusion protein, and thus purifying the desired protein from the sample. The invention describes a method for producing a streptavidin-binding fusion protein. This sequence represents a streptavidin-binding fusion the creation of streptavidin-binding fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel peptide with high affinity for streptavidin, is expressed as part of fusion protein to facilitate detection, quantitation and purification of desired protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention describes a peptide (I) which binds streptavidin with a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80.9%; Score 38; DB 23; Length 38
100.0%; Pred. No..4.1e-33;
ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MDEKTIGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                     Streptavidin-binding peptide and affinity tag.
                                                                                                                                                                                                                                                                                                                                                                              Keefe AD;
                             ABG67087 standard; Peptide; 38 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 13; Fig 7A; 56pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABUS7609 standard; Peptide; 38
                                                                                                                                                     Streptavidin-binding peptide
                                                                                                                                                                                                                                                                                 31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                                                                                                                                                31-OCT-2000; 2000WO-US41717.
                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                               (GEHO ) GEN HOSPITAL CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09-APR-2003 (first entry)
                                                                                                                                                                                                                                                                                                                                                                            Wilson DS,
                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2002-500155/53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38 AA;
                                                                                                                                                                                                                     WO200238580-A1
                                                                                                                                                                                                                                                                                                                                                                            Szostak JW,
                                                                                           24-SEP-2002
                                                                                                                                                                                                                                                    16-MAY-2002
                                                                                                                                                                                      Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nvention.
                                                             ABG67087;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABUS7609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 4
ABUS7609
                ABG67087
RESULT
                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 axxxax
```

ö

ö

Gaps

ö

Length 47; Indels

100.0%; Score 47; DB 24; 100.0%; Pred. No. 1.3e-42; ive 0; Mismatches 0;

Conservative

Query Match Best Local Similarity Matches 47; Conserv

```
Escherichia coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (SZOS/) S
(WILS/) V
(KEEF/) H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABU57600
 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                   The invention relates to a peptide which binds streptavidin with a dissociation constant less than 10 micro M, where the peptide is not disulphide bonded or cyclised, or with a dissociation constant less than 10 micro M, where the amino acid sequence of the peptide does not contain an HPQ, HPM, HPN or HQP motif. The peptides are generated by the mENA an HPQ, HPM, HPN or HQP motif. The peptides are generated by the mENA nucleic acid encoding the peptide, Also include are a nucleic acid encoding the peptide, a vector comprising the nucleic acid, pertain of interest covalently linked to the streptavidin binding peptide and detecting the presence of the fusion protein in a sample using streptavidin or streptavidin-containing compounds. The fusion protein (which comprises the desired protein of interest covalently
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fusion protein in the sample, contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the fusion protein, thereby purifying the protein of interest from the sample. The present sequence is streptavidin binding peptide SB19, N-terminus, used as an affinity tag to purify fusion proteins.
Streptavidin-binding synthetic peptide SB19 C4 N-terminal affinity tag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linked to the streptavidin binding peptide) is useful for purifying a protein of interest from a sample, which involves expressing the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                           peptide which binds streptavidin with high affinity useful as ity tags for purifying fusion proteins containing proteins of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ô
                       Streptavidin-binding peptide; mRNA display; peptide library; fusion protein; SB19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Streptavidin-binding peptide SB19 truncation mutant #4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.le-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80.9%; Score 38; DB 24;
100.0%; Pred. No. 4.1e-33
:ive 0; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Streptavidin-binding peptide; mutant; mutein
                                                                                                                                                                                                                                             Keefe AD
                                                                                                                                                                                                                                                                                                                                              Claim 14; Fig 7A; 36pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABG67078 standard; Peptide; 61
                                                                                                                                        31-OCT-2001; 2001US-0004381.
                                                                                                                                                                31-OCT-2000; 2000US-244541P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               38; Conservative
                                                                                                                                                                                                                                          Szostak JW, Wilson DS,
                                                                                                                                                                                       (SZOS/) SZOSTAK J W. (WILS/) WILSON D S. (KEEF/) KEEFE A D.
                                                                                                                                                                                                                                                                    WPI; 2003-182639/18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              38 AA;
                                                                                      US2002155578-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24-SEP-2002
                                                                                                              24-OCT-2002.
                                                              Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                             Novel pep
affinity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABG67078;
                                                                                                                                                                                                                                                                                                                       interest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABG67078
ID ABG6
XX
AC ABG6
XX
DT 24-5
XX
XX
DB Stre
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 5
 g
```

```
protein. This sequence represents a truncation mutant of the streptavidin-binding peptide SB-19 isolated from Escherichia coli using a method described in the specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention describes a peptide (I) which binds streptavidin with a dissociation constant less than 10 muM or 23 nM, where the amino acid sequence of (I) does not contain an HPO, HPW, HPN or HQP motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (I) is useful for purifying a desired protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the fusion protein, and thus purifying the desired protein from the sample. The invention describes a method for producing a streptavidin binding fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel peptide with high affinity for streptavidin, is expressed as part of fusion protein to facilitate detection, quantitation and purification of desired protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Streptavidin-binding peptide; mRNA display; peptide library; fusion protein; mutant; mutein; SB19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Synthetic peptide SB19 C-terminal deletion mutant, C3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MDEKTIGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80.9%; Score 38; DB 23; I
100.0%; Pred. No. 6.3e-33;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABU57600 standard; Peptide; 61 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 9; Fig 5; 56pp; English
                                                                                                                          31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                               31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31-OCT-2001; 2001US-0004381.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31-OCT-2000; 2000US-244541P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                            (GEHO ) GEN HOSPITAL CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity 100.
nes 38; Conservative
                                                                                                                                                                                                                                                                                                                          Szostak JW, Wilson DS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SZOSTAK J W.
WILSON D S.
KEEFE A D.
                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-500155/53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US2002155578-A1
WO200238580-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-APR-2003
                                                                16-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24-OCT-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABU57600;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
```

ö

```
ch 80.9%; Score 38; DB 24; Length 61; 1 Similarity 100.0%; Pred. No. 6.3e-33; 38; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                      Streptavidin-binding peptide SB19 truncation mutant #3.
                                                                                                                                                                                                                                                                                                  1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                          1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                    Streptavidin-binding peptide; mutant; mutein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Keefe AD;
                                                                                                                                                                                                                                                                                                                                            ABG67077 standard; Peptide; 75 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                            31-OCT-2000; 2000WO-US41717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31-OCT-2000; 2000WO-US41717
                                                                                                                                                                                                                                                                                                                                                                        24-SEP-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (GEHO ) GEN HOSPITAL CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Szostak JW, Wilson DS,
       Szostak JW, Wilson DS,
                                                                                                                                                                                                                                                                     Best Local Similarity
                                                                                                                                                                                                                                                 61 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                   Escherichia coli
                                                                                                                                                                                                                    peptide of the
                                                                                                                                                                                                                                                                                                                                                                                                                                WO200238580-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                              16-MAY-2002.
                                                                                                                                                                                                                                   mutations
                                                                                                                                                                                                                                                                                                                                                          ABG67077;
                                                 interest
                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                            Matches
ò
                                                                                                                                                                                                                                                                                                       요
```

```
protein. This sequence represents a truncation mutant of the streptavidin-binding peptide SB-19 isolated from Escherichia coli using a method described in the specification.
                                                                                                                                                                                                                                  The invention describes a peptide (I) which binds streptavidin with a dissociation constant less than 10 muM or 23 nM, where the amino acid sequence of (I) does not contain an HPQ, HPM, HPN or HQP motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (I) is useful for purifying a desired protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the susion protein, and thus purifying the complex and recovering the sample. The invention describes a method for producing a streptavidin-binding fusion
Novel peptide with high affinity for streptavidin, is expressed as part of fusion protein to facilitate detection, quantitation and purification of desired protein
                                                                                                                                                                  Claim 9; Fig 5; 56pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      75 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sednence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 8
ABUS7599
               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                 The invention relates to a peptide which binds streptavidin with a dissociation constant less than 10 micro M, where the peptide is not dissociation constant less than 10 micro M, where the peptide is not 10 micro M, where the amino acid sequence of the peptide does not contain 10 micro M, where the amino acid sequence of the peptide does not contain an HPO, HPM, HPN or HQP motif. The peptides are generated by the mRNA display method to create a library of peptides. Also include are a nucleic acid encoding the peptide, a vector comprising the nucleic acid, esten of interest covalently linked to the streptavidin binding protein of interest covalently linked to the streptavidin containing compounds. The fusion protein (which comprises the desired protein of interest covalently in the sample, contacting the sample with streptavidin contacting the sample with streptavidin nucleic acid, estending the complex formation between the fusion protein and the sample, contacting the sample with streptavidin and the present sequence is a mutated version of SB19, a streptavidin binding the present sequence is a mutated version of SB19, a streptavidin binding the present sequence is a mutated version of SB19, a streptavidin binding the present sequence is a mutated version of SB19, a streptavidin binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        invention. The mutants comprise 3 N-terminal deletions,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C-terminal deletions and a truncated N-terminal peptide with point
                                                                                                                                                                                                      Novel peptide which binds streptavidin with high affinity useful as affinity tags for purifying fusion proteins containing proteins of
                                                       Keefe AD;
                                                                                                                                                                                                                                                                                                                                                         Claim 14; Fig 5; 36pp; English
```

```
ö
                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Novel peptide which binds streptavidin with high affinity useful as affinity tags for purifying fusion proteins containing proteins of
                       ö
                                                                                                                                                                                                                  Streptavidin-binding peptide; mRNA display; peptide library;
fusion protein; mutant; mutein; SB19.
 Length 75;
                                                                                                                                                                                           Synthetic peptide SB19 C-terminal deletion mutant, C2.
                                          1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                            1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
80.9%; Score 38; DB 23; I
100.0%; Pred. No. 7.5e-33;
                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                               Keefe AD;
                                                                                                                          ABU57599 standard; Peptide; 75 AA
                                                                                                                                                                                                                                                                                                                      31-OCT-2001; 2001US-0004381.
                                                                                                                                                                                                                                                                                                                                             31-OCT-2000; 2000US-244541P.
                                                                                                                                                                      09-APR-2003 (first entry)
         Best Local Similarity 100.
Matches 38; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                               Szostak JW, Wilson DS,
                                                                                                                                                                                                                                                                                                                                                                 (SZOS/) SZOSTAK J W. (WILS/) WILSON D S.
                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2003-182639/18.
                                                                                                                                                                                                                                                                                                                                                                              (WILS/) WILSON D S (KEEF/) KEEFE A D.
                                                                                                                                                                                                                                                                          US2002155578-A1.
                                                                                                                                                                                                                                                                                                24-OCT-2002.
                                                                                                                                                                                                                                                    Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   interest
```

ö

Gaps

ö

The invention relates to a peptide which binds streptavidin with a dissociation constant less than 10 micro M, where the peptide is not disulphide bonded or cyclised, or with a dissociation constant less than 10 micro M, where the amino acid sequence of the peptide does not contain an HPQ, HPM, HPN or HQP motif. The peptides are generated by the mRNA

WPI; 2002-500155/53

Claim 14; Fig 5; 36pp; English.

```
cc nucleic acid encoding the peptide, a vector comprising the nucleic acid,
cc a fusion protein (and its encoding nucleic acid/vector) comprising a
cc protein of interest covalently linked to the streptavidin binding
cc peptide and detecting the presence of the fusion protein in a sample
cc using streptavidin or streptavidin-containing compounds. The fusion
cc using streptavidin or streptavidin-containing compounds. The fusion
cc protein (which comprises the desired protein of interest covalently
cc linked to the streptavidin binding peptide) is useful for purifying a
cc protein of interest from a sample, which involves expressing the
cc fusion protein in the sample, contacting the sample with streptavidin
cc under conditions that allow complex formation between the fusion protein
cc and the streptavidin, isolating the complex and recovering the fusion
cc and the streptavidin, isolating the complex and recovering the fusion
cc protein, thereby purifying the protein of interest from the sample.
cc The present sequence is a mutated version of SB19, a streptavidin binding
cc peptide of the invention. The mutants comprise 3 N-terminal deletions,
cc contacting the complex and recovering the fusion protein action of the sequence is a mutated version of interest from the sample.
cc peptide of the invention. The mutants comprise 3 N-terminal deletions,
cc recruinal deletions and a truncated N-terminal peptide with point
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                  The invention describes a peptide (I) which binds streptavidin with a dissociation constant less than 10 muM or 23 nM, where the amino acid sequence of (I) does not contain an HPQ, HPM, HPN or HQP motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (I) is useful for purifying a desired protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the sample. The protein, and thus purifying the desired protein from the sample. The
the streptavidin, isolating the complex
protein, and thus purifying the desired
invention describes a method for produci
                                                                                                                                                                                                                                                                                                                                  Novel peptide with high affinity for streptavidin, is expressed of fusion protein to facilitate detection, quantitation and purification of desired protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABG67076 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-500155/53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200238580-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Escherichia coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Streptavidin-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Streptavidin-binding peptide SB19 truncation mutant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABG67076;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   display method to create a library of peptides. Also include are a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GEHO ) GEN HOSPITAL CORP
                                                                                                                                                                                                                                                                                    9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _
                                                                                                                                                                                                                                                                                    Fig 5; 56pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wilson DS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Peptide; 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Keefe AD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 38;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mutant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
producing a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 24;
7.5e-33;
  streptavidin-binding fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

밁 Ś

```
RESULT 10
ABU57598
ID ABU57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ន្តន្តន្តន
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                            The invention relates to a peptide which binds streptavidin with a CC disapociation constant less than 10 micro M, where the peptide is not CC disalphide bonded or cyclised, or with a dissociation constant less than CC 10 micro M, where the amino acid sequence of the peptide does not contain CC an HPQ, HPM, HPN or HQP motif. The peptides are generated by the mRNA CC display method to create a library of peptides. Also include are a CC nucleic acid encoding the peptide, a vector comprising the nucleic acid, a fusion protein (and its encoding nucleic acid/vector) comprising a CC protein of interest covalently linked to the streptavidin binding CC peptide and detecting the presence of the fusion protein in a sample CC using streptavidin or streptavidin-containing compounds. The fusion protein (which comprises the desired protein of interest covalently CC linked to the streptavidin binding peptide) is useful for purifying a CC protein of interest from a sample, which involves expressing the CC grotein in the sample, contacting the sample with streptavidin cCC and the streptavidin, isolating the complex and recovering the fusion protein thereby nurifying the complex and recovering the sample.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 38; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein. This sequence represents a truncation mutant of the streptavidin-binding peptide SB-19 isolated from Escherichia coli using a method described in the specification.
The present sequence is a mutated version of SB19, a streptavidin binding peptide of the invention. The mutants comprise 3 N-terminal deletions, 3 C-terminal deletions and a truncated N-terminal peptide with point
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                   Claim 14; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Szostak JW, Wilson DS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31-OCT-2000; 2000US-244541P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US2002155578-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Streptavidin-binding peptide; mRNA display; peptide library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic peptide SB19 C-terminal deletion mutant,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABU57598;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABU57598 standard; Peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel peptide which binds streptavidin with high affinity useful affinity tags for purifying fusion proteins containing proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2003-182639/18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31-OCT-2001; 2001US-0004381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             fusion protein; mutant; mutein; SB19
                                                    protein, thereby purifying the protein of interest from the sample
                                                                                                                                                                                                                                                                                                                                                                                                                                         interest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (KEEF/) KEEFE A D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (XZOS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SZOSTAK J W. WILSON D S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       89 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                  5; 36pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                80.9%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Keefe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 38; 
; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 23; 1
8.8e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>,,</u>
```

```
RESULT 11
ABG67073
밁
                                              δ
                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                           Query Match
Best Local S
Matches 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 38
                                                                                                                                                                                                                                                                         disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (I) is useful for purifying a desired protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the complex and recovering the fusion protein, and thus purifying the desired protein from the sample. The invention describes a method for producing a streptavidin-binding fusion protein. This sequence represents a streptavidin-binding peptide isolated from Escherichia coli using a method described in the specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  *mutations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention describes a peptide (I) which binds streptavidin with a dissociation constant less than 10 muM or 23 nM, where the amino acid sequence of (I) does not contain an HPQ, HPM, HPN or HQP motif, is not sequence of (I) does not contain an HPQ, HPM, HPN or HQP motif, is not sequence of (I) does not contain an HPQ, HPM, HPN or HQP motif, is not sequence of (I) does not contain an HPQ, HPM, HPN or HQP motif, is not sequence of (I) does not contain an HPQ, HPM, HPN or HQP motif, is not sequence of (I) does not contain an HPQ, HPM, HPN or HQP motif, is not sequence of (I) does not contain an HPQ, HPM, HPN or HQP motif, is not sequence of (I) does not contain an HPQ, HPM, HPN or HQP motification and HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not contain an HPQ are the sequence of (I) does not co
                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel peptide with high affinity for streptavidin, is expressed of fusion protein to facilitate detection, quantitation and purification of desired protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Szostak JW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 9; Fig 3; 56pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2002-500155/53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31-OCT-2000; 2000WO-US41717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200238580-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Streptavidin-binding peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Streptavidin-binding peptide SB19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABG67073;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABG67073 standard; Peptide; 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (GEHO ) GEN HOSPITAL CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                    MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                             101 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          89 AA;
                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wilson DS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   80.9%;
                                                                                                                                100.0%;
                                                                                                                                                                      80.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Keefe AD;
                                                                                                           Score 38; DB;; Pred. No. 9.9.
                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 38;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                      DB 23; I
9.9e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 24; I
8.8e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 89;
                                                                                                                                                                Length 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                              Indels
                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98
                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               part
                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

RESULT 12 ABG67075

```
RESULT 13
ABU57595
ID ABU57
X A X E X E X E X A X A X
                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 38
                                                                                                                                                                                                                                                                                                                                                                                                                          The invention describes a peptide (I) which binds streptavidin with a dissociation constant less than 10 muM or 23 nM, where the amino acid sequence of (I) does not contain an HPQ, HPM, HPN or HQP motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (I) is useful for purifying a desired protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and thus purifying the complex and recovering the sample. The invention describes a method for producing a streptavidin-binding fusion invention describes a method for producing a streptavidin-binding fusion
                                                                                                                                        ABU57595;
                                                                                                                                                                      ABU57595 standard; Peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Novel peptide with high affinity for streptavidin, is expressed of fusion protein to facilitate detection, quantitation and purification of desired protein -
                                                    Streptavidin-binding
                                                                                Streptavidin-binding synthetic peptide SB19
                                                                                                              09-APR-2003
                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Szostak JW,
                                                                                                                                                                                                                                                                                                                                                                                    protein. This sequence represents a truncation mutant of the streptavidin-binding peptide SB-19 isolated from Escherichia coli using a method described in the specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 9; Fig 5; 56pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2002-500155/53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31-OCT-2000; 2000WO-US41717.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Streptavidin-binding peptide; mutant; mutein
                                        fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200238580-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Streptavidin-binding peptide SB19 truncation mutant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABG67075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABG67075 standard; Peptide; 101 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (GEHO ) GEN HOSPITAL CORP.
                                                                                                                                                                                                                                                                                                   38;
                                                                                                                                                                                                                                                              1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                           MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                            101 AA;
                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wilson DS,
                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                             80.9%; but
100.0%; Pr
                                                     peptide; mRNA display; peptide library;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Keefe AD;
                                                                                                                                                                                                                                                                                                  ; Score 38; DB
%; Pred. No. 9.9
0; Mismatches
                                                                                                                                                                      101
                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                 DB 23; ; 9.9e-33;
                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                             Length 101;
                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 part
```

0

```
ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      peptide and detecting the presence of the fusion protein in a sample using streptavidin or streptavidin-containing compounds. The fusion protein (which comprises the desired protein of interest covalently linked to the streptavidin binding peptide) is useful for purifying a protein of interest from a sample, which involves expressing the fusion protein in the sample, contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein, thereby purifying the protein of interest from the sample. The present sequence is a streptavidin binding peptide of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention relates to a peptide which binds streptavidin with a dissociation constant less than 10 micro M, where the peptide is not disulphide bonded or cyclised, or with a dissociation constant less than 10 micro M, where the amino acid sequence of the peptide does not contain an HPQ, HPM, HPN or HQP motif. The peptides are generated by the mRNA display method to create a library of peptides. Also include are a nucleic acid encoding the peptide, a vector comprising the nucleic acid, a fusion protein (and its encoding mucleic acid/vector) comprising a protein of interest covalently linked to the streptavidin binding
                                                              US2002155578-A1
                                                                                                                                                                       Streptavidin-binding
31-@CT-2001; 2001US-0004381.
                             24-OCT-2002.
                                                                                            Synthetic
                                                                                                                                        Streptavidin-binding peptide; mRNA display; peptide library;
                                                                                                                                                                                                       09-APR-2003
                                                                                                                                                                                                                                      ABU57597;
                                                                                                                                                                                                                                                                     ABU57597 standard; Peptide; 101 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 14; Fig 3; 36pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel peptide which binds streptavidin with high affinity useful affinity tags for purifying fusion proteins containing proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2003-182639/18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Szostak JW, Wilson DS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31-OCT-2000; 2000US-244541P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31-OCT-2001; 2001US-0004381.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US2002155578-A1
                                                                                                                         fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (SZOS/) SZOSTAK J W. (WILS/) WILSON D S. (KEEF/) KEEFE A D.
                                                                                                                                                                                                                                                                                                                                                                                                                 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                    MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                       (first entry)
                                                                                                                                                                      synthetic peptide SB19 full length peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                              80.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Keefe AD;
                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                              Score 38;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                DB 24; ; ; 9.9e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 101;
                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                 <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of
                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contain
                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
ABG67091
ID ABG67
XX ABG67
AC ABG67
XX ABG67
AC ABG67
XX 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to a peptide which binds streptavidin with a CC dissociation constant less than 10 micro M, where the peptide is not CC disulphide bonded or cyclised, or with a dissociation constant less than CC 10 micro M, where the amino acid sequence of the peptide does not contain CC an HPQ, HPM, HPN or HQP motif. The peptides are generated by the mRNA CC display method to create a library of peptides. Also include are a CC nucleic acid encoding the peptide, a vector comprising the nucleic acid, comprising a CC protein of interest covalently linked to the streptavidin binding computed and detecting the presence of the fusion protein in a sample CC using streptavidin or streptavidin-containing compounds. The fusion protein (which comprises the desired protein of interest from a sample, which involves expressing the CC under conditions that allow complex formation between the fusion protein conditions that allow complex formation between the fusion protein compoundin, isolating the complex and recovering the fusion compounds. The fusion protein, thereby purifying the protein of interest from the sample, contacting the sample with streptavidin. Isolating the complex and recovering the fusion compounds is protein, thereby purifying the protein of interest from the sample.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                 Streptavidin-binding peptide; maltose-binding protein; hexahistidine tag.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 14; Fig 5; 36pp; English.
                                                                                                                                                                                                                                                                                                                                         Escherichia coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Maltose-binding protein/Streptavidin-binding peptide fusion protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABG67091;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel peptide which binds streptavidin with high affinity useful as affinity tags for purifying fusion proteins containing proteins of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2003-182639/18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Szostak JW, Wilson DS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31-OCT-2000; 2000US-244541P.
                                                                                          31-OCT-2000; 2000WO-US41717.
                                                                                                                                                      31-OCT-2000;
                                                                                                                                                                                                                                                                             WO200238580-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABG67091 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (XILS/)
                                                                                                                                                                                                                  16-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (KEEF/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SZOSTAK J W. WILSON D S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEEFE A D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative 0;
                                                                                                                                                      2000WO-US41717.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Keefe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 38;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9.9e-33;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

(GEHO ) GEN HOSPITAL CORP

Szostak JW, Wilson DS,

Keefe AD;

```
Search completed: February 6, 2004, 17:17:37 Job time : 41 secs
                                                                                                    밁
                                                                                                                                             Ş
                                                                                                                                                                                                 Query Match 80.9%; Score 38; DB 23; I Best Local Similarity 100.0%; Pred. No. 3.7e-32; Matches 38; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                The invention describes a peptide (I) which binds streptavidin with a dissociation constant less than 10 muM or 23 nM, where the amino acid sequence of (I) does not contain an HPQ, HPM, HPM or HQP motif, is not disulfide bonded or cyclised. A fusion protein comprising a protein of interest covalently linked to (I) is useful for purifying a desired protein from a sample by contacting the sample with streptavidin under conditions that allow complex formation between the fusion protein and the streptavidin, isolating the desired protein from the sample. The invention describes a method for producing a streptavidin-binding fusion protein. This sequence represents a fusion protein comprising maltose-binding protein, a streptavidin, a streptavidin-binding peptide, and a protein comprising the complex contains the sample of the sample invention describes a method for producing a streptavidin-binding fusion protein. This sequence represents a fusion protein comprising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Novel peptide with high affinity for streptavidin, is expressed as part of fusion protein to facilitate detection, quantitation and purification of desired protein -
                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Fig 9B; 56pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2002-500155/53.
N-PSDB; ABK95732.
                                                                                                                                                                                                                                                                                                                                                 hexahistidine tag.
                                                                                                    378 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 415
                                                                                                                              1 MDEKTTGWRGGHVVEGLAGELEQLRARLEHHPQGQREP 38
                                                                                                                                                                                                                                                                                                   426 AA;
                                                                                                                                                                                                                                               Length 426;
                                                                                                                                                                                                      Indels
                                                                                                                                                                                                   0,
                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                      0;
```